INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7   G11B20/18   G11B20/10   G11B20/14   H03M13/05

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7   G11B   H03M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BLISS W G: "Circuitry for performing error correction calculations on baseband encoded data to eliminate error propoagation" IBM TECHNICAL DISCLOSURE BULLETIN, IBM CORP. NEW YORK, US, vol. 23, no. 10, March 1981 (1981-03), pages 4633-4634, XP002181993 ISSN: 0018-8689 cited in the application the whole document	1,11, 13-15, 17,18
Y	figure 1	2-9,12, 16

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[X] Further documents are listed in the continuation of box C.   [X] Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
1 March 2004	09/03/2004

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Rydyger, K

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page 1 of 3

INTERNATIONAL SEARCH REPORT

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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X	SCHOUHAMER IMMINK KEES A: "A practical method for approaching the channel capacity of constrained channels" IEEE TRANSACTIONS ON INFORMATION THEORY, IEEE INC. NEW YORK, US, vol. 43, no. 5, September 1997 (1997-09), pages 1389-1399, XP002181994 ISSN: 0018-9448 figure 2 page 1390, column 1 -column 2 abstract	1,11, 13-15,18
X	WO 01 67447 A (CIRRUS LOGIC INC) 13 September 2001 (2001-09-13) figures 3-6 page 5, line 12 -page 7, line 19 abstract	1,11, 13-15, 17,18
X	US 6 009 549 A (BEHRENS RICHARD T ET AL) 28 December 1999 (1999-12-28) column 3, line 1 - line 28	1,11, 13-15, 17,18
X	FAN J L ET AL: "Constrained coding techniques for soft iterative decoders" GLOBAL TELECOMMUNICATIONS CONFERENCE - GLOBECOM'99, vol. 1B, 5 December 1999 (1999-12-05), pages 723-727, XP010373643 page 724, column 1; figure 1 abstract	1,11, 13-15, 17,18
X	UMEMOTO M: "ON CODING AND DECODING FOR HIGH-ORDER PARTIAL RESPONSES SYSTEMS" IEEE TRANSACTIONS ON MAGNETICS, IEEE INC. NEW YORK, US, vol. 34, no. 1, January 1998 (1998-01), pages 80-84, XP000999374 ISSN: 0018-9464 figure 2	1,11, 13-15, 17,18
Y	KUKORELLY Z ET AL: "The capacity of some hexagonal (d, k)-constraints" PROCEEDINGS OF THE 2001 IEEE INTERNATIONAL SYMPOSIUM ON INFORMATION THEORY. ISIT 2001. WASHINGTON, WA, JUNE 24 - JUNE 29, 2001, IEEE INTERNATIONAL SYMPOSIUM ON INFORMATION THEORY, NEW YORK, NY: IEEE, US, 24 June 2001 (2001-06-24), pages 64-64, XP010552679 ISBN: 0-7803-7123-2 the whole document	4

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category°	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 1 175 014 A (TRW INC) 23 January 2002 (2002-01-23) abstract figures 1,2	2,8,9, 12,16
Y	WEEKS W: "Full-Surface Data Storage" THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN ELECTRICAL ENGINEERING IN THE GRADUATE COLLEGE OF THE UNIVERSITY OF ILLINOIS AT URBANA- CHAMPAIGN, XX, XX, 2000, page complete XP002227664 the whole document	3-7

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 03/05498

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